



Trends in in Project Management

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PM Challenge 2009

Academy of Program/Project & Engineering Leadership
<http://appel.nasa.gov>



Complex Project Management Challenges

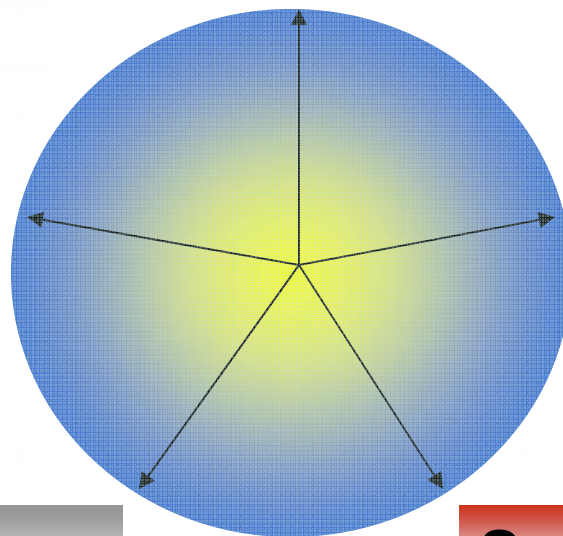


Long-Term Commitment

Can we sustain the passion and public support?

Talent Management

Can we attract and retain the people we need?



Resources

Can we obtain the resources and contain costs?

Technical Challenges

Can we deal with the complexity of the projects ahead?

Social Challenges

Can we collaborate with international partners, industry, and academia?



Global Trends in Project Management



Drivers

- Increasing complexity
- Global market for top talent



Approaches

- Project academies
- Certification
- Standards

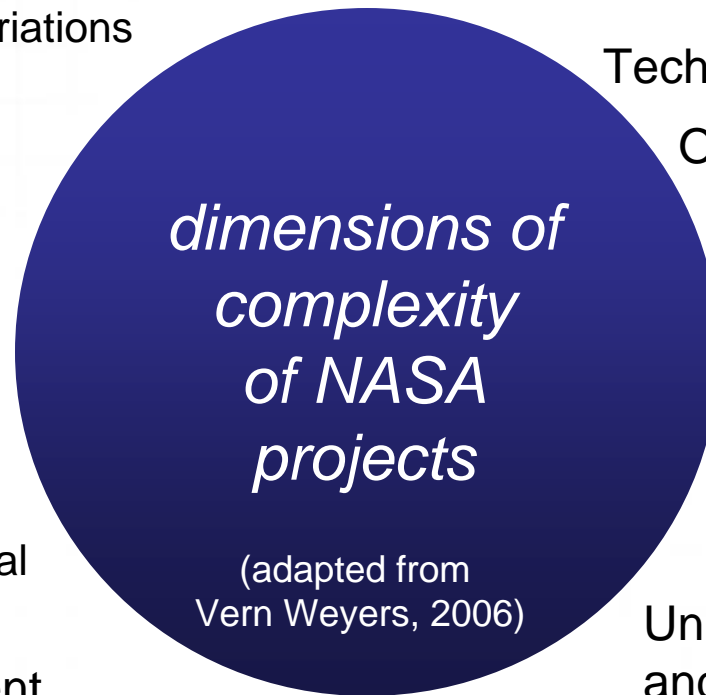


Increasing Project Complexity



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- Budget
- Congressional appropriations
 - Changing agency constraints and priorities
- Contractual federal regulations
- Schedule
- Launch windows
 - Science/operational requirements
- Sustained commitment
- Administration
 - Congress
 - Public
 - Partners - academia, international, industry



Interfaces/systems engineering

Technological readiness

One-of-a-kind systems

Harsh launch and
space environment

Software

Long operational
lifetimes

Unique test facilities
and equipment

High performance requirements

It has to work the first time

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How We Learn



At three recent APPEL Masters Forums, we asked ~200 NASA master practitioners one question: how do you learn how to do your job?



Handwritten Notes:

- Human Capital:**
 - Hands on
 - On the job
 - Growth in the project
 - Diversity
 - Very little class room exp.
 - Classical thinking
 - Management
 - Key to learning is wanting
 - Build on knowledge
 - Diverse background
 - Linkage to the thing to practice
- Expertise (<10% from formal education):**
 - Mentors
 - Acquired in childhood
 - Usually alone
 - Personal experience
 - To collaborate (showing off)
 - Simple Exercises
 - Practice & showing off (game)
 - Complexity & Uncertainty
- Formal training - PM 101:**
 - but, real learning thru observation (exp. failures) and practice
 - engineering → TRAIN + error
 - Practice for technical
 - Asking questions + listening → custom
 - Learn thru negative examples - find the new mistakes rather than repeating old ones - the use lessons learned + the "old way" and put a new spin on your approach
- HOW WE LEARN:**
 - On the job training
 - Direct team experience
 - Informal leader culture
 - networking
 - working with others
 - Formal training
 - tools
- CONTINUING PROFESSIONAL DEV:**
 - SEEK IT OUT
 - OPEN TO CHANGE
 - intrinsic
 - hands-on experience
 - problem solving
- Other notes:**
 - SEEK DIVERSITY
 - RECOGNIZE EXPERTISE
 - COMMUNICATE
 - SEE THE FOREST
 - LEARN BY DOING
 - SELF-CONSCIOUSNESS
 - FEAR
 - Failings
 - Repetition
 - Luck
 - Take advantage of opportunity
 - On-the-job working
 - Informal mentoring
 - Working with senior people
 - Intrinsic motivation/energy
 - Smarts & Working hard
 - Received honest feedback
 - Politics - navigating
 - School
 - Co-op
 - Formal and informal training
 - mentors/role models
 - networking
 - transferring projects
 - global national exposure
 - continuous thirst for knowledge



How We Learn: 90% On the Job





Project Academies



Top organizations around the world are establishing project academies.

Why?

- Career development framework
 - Common language for project management
 - Strategic organizational alignment
 - Support for entire project management community
- (source: Terry Cooke-Davies, Human Systems International survey)

20 organizations attended 2008 project academy conference, including:

- Shell
- Motorola
- Rolls Royce
- BAE
- Schlumberger Group
- AMEC
- Costain



OMB FAC-P/PM Certification



- The Office of Management & Budget (OMB) has established a new set of requirements for program/project management certification applicable to all executive agencies
 - The Federal Acquisition Certification for Program/Project Managers (FAC-P/PM) recognizes three levels of certification and features continuous learning requirements
- In response, NASA must develop and certify NASA program/project managers in accordance with these standards





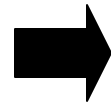
Certification Levels & the NASA Framework



FAC-P/PM Certification & NASA Levels of Leadership

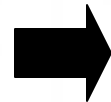


FAC Apprentice Level



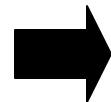
NASA project team members /
technical engineers

FAC Mid-Level/Journeyman



NASA small project managers /
subsystem leads

FAC Senior/Expert



NASA large project managers /
major systems managers /
program managers
(existing veteran P/PMs)



How do NASA P/PMs meet requirements?



To meet certification requirements, NASA P/PMs must:

- Demonstrate the designated NASA/FAC technical and leadership competency proficiencies
- Meet the FAC experience and capability requirements
- Demonstrate competence in performing program/project responsibilities
- Demonstrate knowledge of NASA project management policies and guidelines



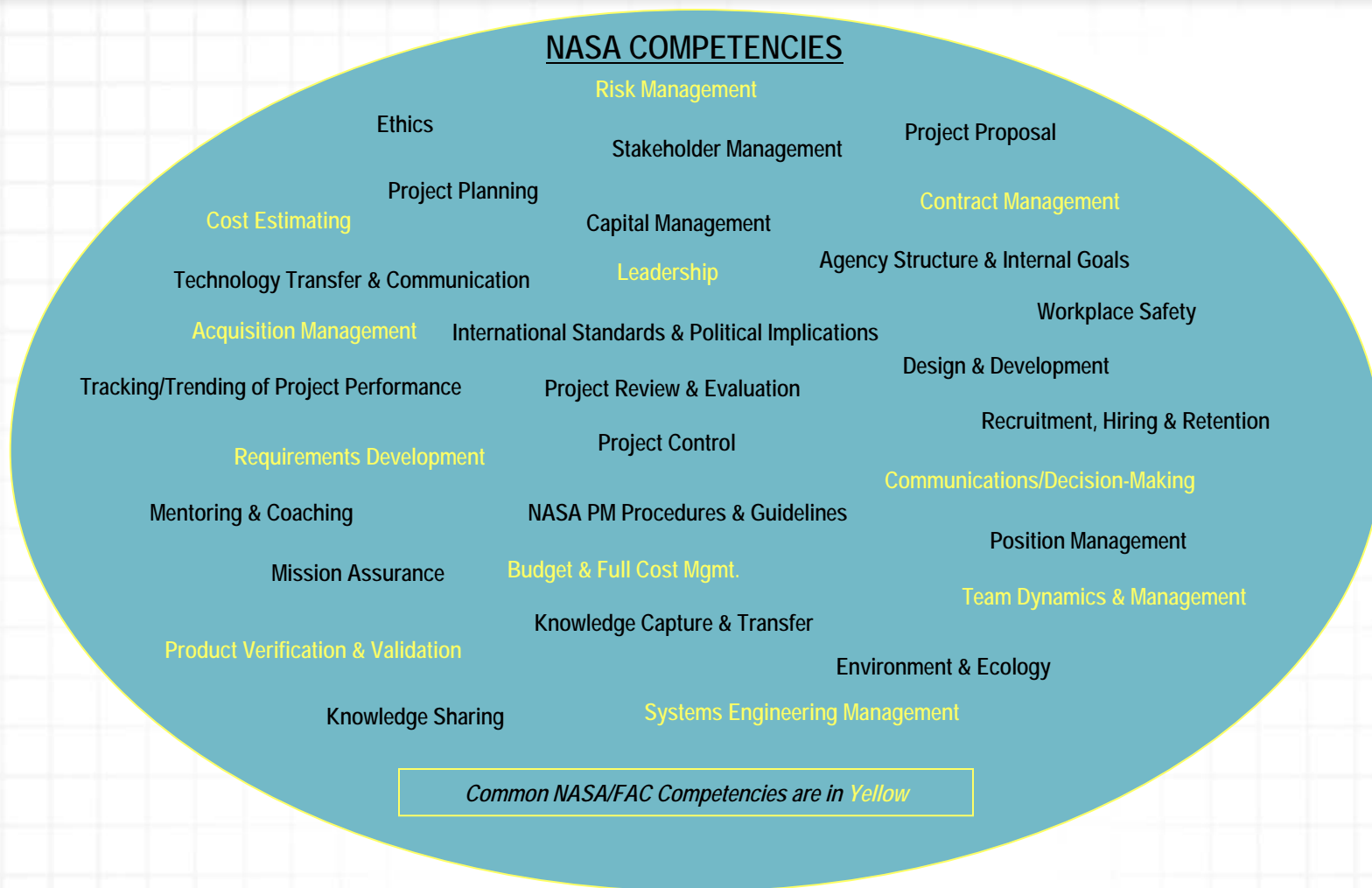
NASA P/PM Competency Areas



1. Project Conceptualization
2. Resource Management
3. Project Implementation
4. Delivery, Operation, and Closeout
5. Project Control and Evaluation
6. NASA Environment
7. Human Capital Management
8. Safety and Mission Assurance
9. Professional and Leadership Development
10. Knowledge Management



Overlap of NASA/FAC Competencies



***To meet certification requirements, NASA P/PMs must demonstrate that they possess performance proficiency for the common NASA/FAI competencies and 80% of the remaining NASA competencies.**

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Concluding Thoughts



Trends for next year:

- Complexity.....
- Global competition for top talent.....



Approaches:

Developing corporate project leadership requires an organizational commitment to understanding the dynamics of complex projects

- Project academies
- Certification





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